ARC 3583C

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

Rule making related to water quality

The Environmental Protection Commission hereby amends Chapter 61, "Water Quality Standards," and Chapter 62, "Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions," Iowa Administrative Code.

Legal Authority for Rule Making

This rule making is adopted under the authority provided in Iowa Code sections 455B.105(11)"a," 455B.173(2) and 455B.173(3).

State or Federal Law Implemented

This rule making implements, in whole or in part, Iowa Code sections 455B.173(2), 455B.173(3) and 455B.105(11)"a."

Purpose and Summary

The purpose of the amendments is to update the name of the document referenced in the rules from "'Supporting Document for Iowa Water Quality Management Plans,' Chapter IV, July 1976, as revised on November 11, 2009" to "Iowa Wasteload Allocation (WLA) Procedure" to more clearly reflect the contents of the document. A wasteload allocation (WLA) is the portion of a water body's assimilative capacity that is allocated to an existing or future point source discharge. This document establishes the technical methodologies the Department of Natural Resources (Department) uses to develop WLAs and water quality-based effluent limits for point source dischargers. In addition to the update of its name, the document has been revised to make it more understandable and better describe the procedures used in WLA calculations. The revision will also provide greater flexibility to facilities seeking alternative permitting options.

The major elements of the Iowa WLA Procedure document revision are as follows:

a. Update the Stream Low-Flow Values for United States Geological Survey (USGS) gaged sites and ungaged sites based on the USGS low-flow study report "Methods for Estimating Selected Low-Flow Frequency Statistics and Harmonic Mean Flows for Streams in Iowa," by David A. Eash and Kimberlee K. Barnes, published in 2012 and revised in 2013. This change incorporates the most up-to-date stream critical low flows published by USGS to better reflect actual stream low flows;

b. Incorporate statewide default background chemical concentrations using the most up-to-date monitoring data available;

c. Incorporate statewide default effluent chemical concentrations for different types of wastewater treatment plants using the most up-to-date effluent monitoring data available;

d. Replace the total residual chlorine default decay value in the mixing zone with site-specific decay measurements;

e. Incorporate the current implementation procedures for the chloride and sulfate criteria that were adopted in 2009;

f. Revise the *E. coli* WLA procedures for both continuous and noncontinuous discharges in accordance with the limitation on end of pipe permit limits established at 62.8(2);

g. Revise the *E. coli* decay rate coefficient to be consistent with that of other Department programs;

h. Revise the temperature criteria implementation procedure to incorporate all elements of the temperature criteria in Chapter 61 for different designated uses. The revision to the temperature criteria implementation procedure provides flexibility for facilities seeking alternative permitting options;

i. Modify the WLA procedure for pH so that pH criteria must be met at the boundary of the mixing zone instead of the boundary of the zone of initial dilution. This modification will result in increased dilution for pH WLA calculations;

j. Clarify the current mixing zone procedures and the requirements for mixing zone and diffuser studies;

k. Incorporate a Site-Specific Data Collection procedure in order to standardize the site-specific data collection process. The revision will have fewer sampling requirements and will result in cost savings for point source discharge facilities seeking site-specific permit limits;

l. Revise the Water Quality Modeling section to replace previous models with commonly used and modernized QUALIIK and modified Streeter-Phelps models. The revisions also update decay rates and reaeration rates to reflect the latest scientific data;

m. Add a reference to the antidegradation implementation procedure document; and

n. Add a new section on Alternative Site-Specific Methodology for Water Quality Based Limits that provides point source discharge facilities with the flexibility to develop site-specific NPDES permit limits.

Other minor revisions to the document include improvements in the estimation of ammonia nitrogen decay calculations in discharge pipes and general use segments, clarification of the procedure for determining discharge flows used in WLAs, and clarification of various sections to make the document more understandable. The "Iowa Wasteload Allocation (WLA) Procedure" document is available at www.iowadnr.gov/Environmental-Protection/Water-Quality/Wasteload-Allocations.

The amendments also update references to the Department's website.

Public Comment and Changes to Rule Making

Notice of Intended Action for this rule making was published in the Iowa Administrative Bulletin on July 19, 2017, as **ARC 3202C**. Three public hearings were held as follows:

- September 5, 2017 - Washington Public Library
- September 6, 2017 - Urbandale Public Library
- September 7, 2017 - Harlan Community Library

A responsiveness summary has been prepared and is available at: www.iowadnr.gov/Environmental-Protection/Water-Quality/Water-Quality-Standards. The most notable change made in response to public comments is retention of the single sample maximum criterion for *E. coli* in Chapter 61. The Notice of Intended Action proposed to remove this criterion. The Department will instead consider potential changes to the *E. coli* criteria during the Department's regular triennial review process and will solicit further public input at that time.

Adoption of Rule Making

This rule making was adopted by the Environmental Protection Commission on December 19, 2017.

Fiscal Impact

Overall, this rule making is anticipated to result in a cost savings ranging from $26 million to $58 million for point source discharge facilities across the state. This savings results primarily from the changes to the Iowa Wasteload Allocation (WLA) Procedure document described above. These changes create increased flexibility for permittees and result in an overall reduction in regulatory burden. It is expected that the potential costs associated with this rule making are negligible. The Department prepared a detailed analysis of this rule making's fiscal impact. That analysis is available upon request.

Jobs Impact

The cost savings resulting from this rule making will have a positive impact on private sector jobs and employment opportunities in the state. Lower wastewater treatment costs at industrial facilities are expected to have a positive impact on jobs because industries can put the savings toward investment in their businesses, including job growth. Similarly, businesses and industries that discharge to municipal wastewater treatment plants will benefit from lower utility rates if the municipal wastewater treatment plant can lower its operating costs as a result of this rule making. That savings on utility rates for businesses and industries can be put toward investment in their companies to create jobs.

Waivers

This rule making is subject to the waiver provisions of 561—Chapter 10, as adopted by reference at 567—13.1(17A), to the extent such waiver is consistent with federal water quality standards requirements. Any person who believes that the application of the discretionary provisions of this rule making would result in hardship or injustice to that person may petition for a waiver of the discretionary provisions, if any.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rule making by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rule making at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rule making will become effective on February 21, 2018.

The following rule-making actions are adopted:

ITEM 1. Amend paragraph **61.2(4)"a"** as follows:

a. Due to extreme variations in wastewater and receiving water characteristics, spatial dimensions of mixing zones shall be defined on a site-specific basis. These rules are not intended to define each individual mixing zone, but will set maximum limits which will satisfy most biological, chemical, physical and radiological considerations in defining a particular mixing zone. Additional details are noted in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018, for considering unusual site-specific features such as side channels and sand bars which may influence a mixing zone. Applications for operation permits under 567—subrule 64.3(1) may be required to provide specific information related to the mixing zone characteristics below their outfall so that mixing zone boundaries can be determined.

ITEM 2. Amend paragraph **61.2(4)"b,"** introductory paragraph, as follows:

b. For parameters included in Table 1 only (which does not include ammonia nitrogen), the dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical

model presented in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018, or from instream studies of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

ITEM 3. Amend subparagraph **61.2(4)"d"(4)** as follows:

(4) A discharger to interior streams and rivers, the Big Sioux and Des Moines Rivers, and the Mississippi or Missouri Rivers may provide to the department, for consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions. The submission of data should follow the guidance provided in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

ITEM 4. Amend paragraph **61.2(4)"e,"** introductory paragraph, as follows:

e. For ammonia criteria noted in Table 3, the dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical model presented in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018, or from instream studies of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

ITEM 5. Amend paragraph **61.2(4)"f"** as follows:

f. For ammonia criteria noted in Table 3, the stream flow used in determining wasteload allocations to ensure compliance with the chronic criteria of Table 3 will be that value contained at the boundary of the allowed mixing zone. This stream flow may not exceed the percentages of the design low stream flow noted in 61.2(4)*"e"*(1) as measured at the point of discharge.

The pH and temperature values at the boundary of the mixing zone used to select the chronic ammonia criteria of Table 3 will be from one of the following sources. The source of the pH and temperature data will follow the sequence listed below, if applicable data exists from the source.

(1) Specific pH and temperature data provided by the applicant gathered at their mixing zone boundary. Procedures for obtaining this data are noted in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

(2) Regional background pH and temperature data provided by the applicant gathered along the receiving stream and representative of the background conditions at the outfall. Procedures for obtaining this data are noted in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

(3) The statewide ~~average~~ median background values ~~presented in Table IV-2 of the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ as determined by the department.

The stream flow in the zone of initial dilution used in determining effluent limits to ensure compliance with the acute criteria of Table 3 may not exceed 5 percent of the calculated flow associated with the mixing zone for facilities with a dilution ratio of less than or equal to 2:1, and not exceed 10 percent of the calculated flow associated with the mixing zone for facilities with a dilution ratio of greater than 2:1. The pH and temperature values at the boundary of the zone of initial dilution used to select the acute ammonia criteria of Table 3 will be from one of the following sources and follow the sequence listed below, if applicable data exists from the source.

1. Specific effluent pH and temperature data if the dilution ratio is less than or equal to 2:1.

2. If the dilution ratio is greater than 2:1, the logarithmic average pH of the effluent and the regional or statewide pH provided in 61.2(4)*"f"* will be used. In addition, the flow proportioned average temperature of the effluent and the regional or statewide temperature provided in 61.2(4)*"f"* will be

used. The procedures for calculating these data are noted in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

ITEM 6. Amend subparagraph **61.2(4)"g"(4)** as follows:

(4) A discharger to interior streams and rivers, the Big Sioux and Des Moines Rivers, and the Mississippi and Missouri Rivers may provide to the department, for consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions. The submission of data should follow the guidance provided in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

ITEM 7. Amend paragraph **61.3(2)"g"** as follows:

g. Cations and anions guideline values to protect livestock watering may be found in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018.

ITEM 8. Amend subrule 61.3(5) as follows:

61.3(5) *Surface water classification.* The department hereby incorporates by reference "Surface Water Classification," effective June 17, 2015. This document may be obtained on the department's ~~Web site~~ website at ~~http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/Rules.aspx~~ www.iowadnr.gov.

ITEM 9. Amend subrule 61.3(6) as follows:

61.3(6) *Cold water use designation assessment protocol.* The department hereby incorporates by reference "Cold Water Use Designation Assessment Protocol," effective December 15, 2004. This document may be obtained on the department's ~~Web site~~ website at ~~http://www.iowadnr.com/water/standards/index.html~~ www.iowadnr.gov.

ITEM 10. Amend subrule 61.3(7) as follows:

61.3(7) *Warm water stream use assessment and attainability analysis protocol.* The department hereby incorporates by reference "Warm Water Stream Use Assessment and Attainability Analysis Protocol," effective March 22, 2006. This document may be obtained on the ~~departments Web site~~ department's website at ~~http://www.iowadnr.com/water/standards/index.html~~ www.iowadnr.gov.

ITEM 11. Adopt the following **new** subrule 61.3(9):

61.3(9) *Iowa wasteload allocation (WLA) procedure.* The department hereby incorporates by reference "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018. This document may be obtained on the department's website at www.iowadnr.gov.

ITEM 12. Amend subrule 62.8(2) as follows:

62.8(2) *Effluent limitations necessary to meet water quality standards.* No effluent, alone or in combination with the effluent of other sources, shall cause a violation of any applicable water quality standard. When it is found that a discharge that would comply with applicable effluent standards in 567—62.3(455B), 567—62.4(455B) or 567—62.5(455B) or effluent limitations in 567—62.6(455B) would cause a violation of water quality standards, the discharge will be required to meet the water quality-based effluent limits (WQBELs) necessary to achieve the applicable water quality standards as established in 567—Chapter 61. Any such effluent limit shall be derived from the calculated waste load allocation, as described in ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018, or the waste load allocation as required by a total maximum daily load, whichever is more stringent. The translation of waste load allocations to WQBELs shall use

Iowa permit derivation methods, as described in the ~~"Supporting Document for Iowa Water Quality Management Plans," Chapter IV, July 1976, as revised on November 11, 2009~~ "Iowa Wasteload Allocation (WLA) Procedure," as revised on February 21, 2018, except that the daily sample maximum criteria for *E. coli* set forth in ~~Part E of the "Supporting Document for Iowa Water Quality Management Plans"~~ 567—Chapter 61 shall not be used as an end-of-pipe permit limitation.

[Filed 12/22/17, effective 2/21/18]
[Published 1/17/18]
EDITOR'S NOTE: For replacement pages for IAC, see IAC Supplement 1/17/18.